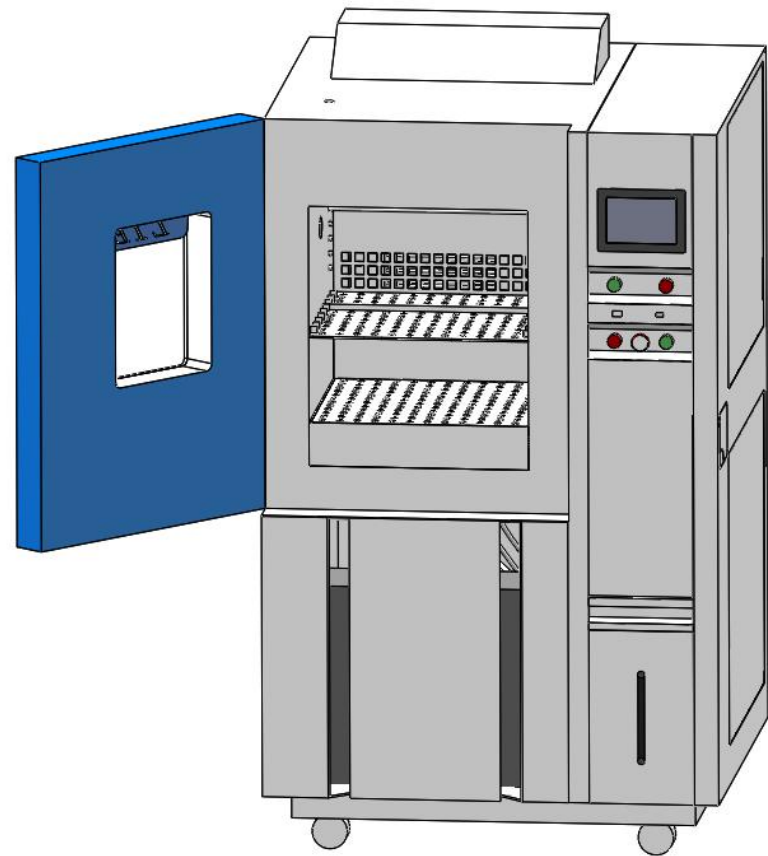


Condensate Climate Test Chamber



Model ATH-100A

TEMPERATURE
10 ~ +60°C

HUMIDITY
95%RH~100%

ISO6270-2 Standard

Paints and Varnishes- Determination of resistance to humidity-

Part 2: Condensation (in cabinet exposure with heated water reservoir)



Automobile



Material



Electronics



Aerospace



PV panels



Navigation



Commodity



Paintings



Battery



Pharmaceutical

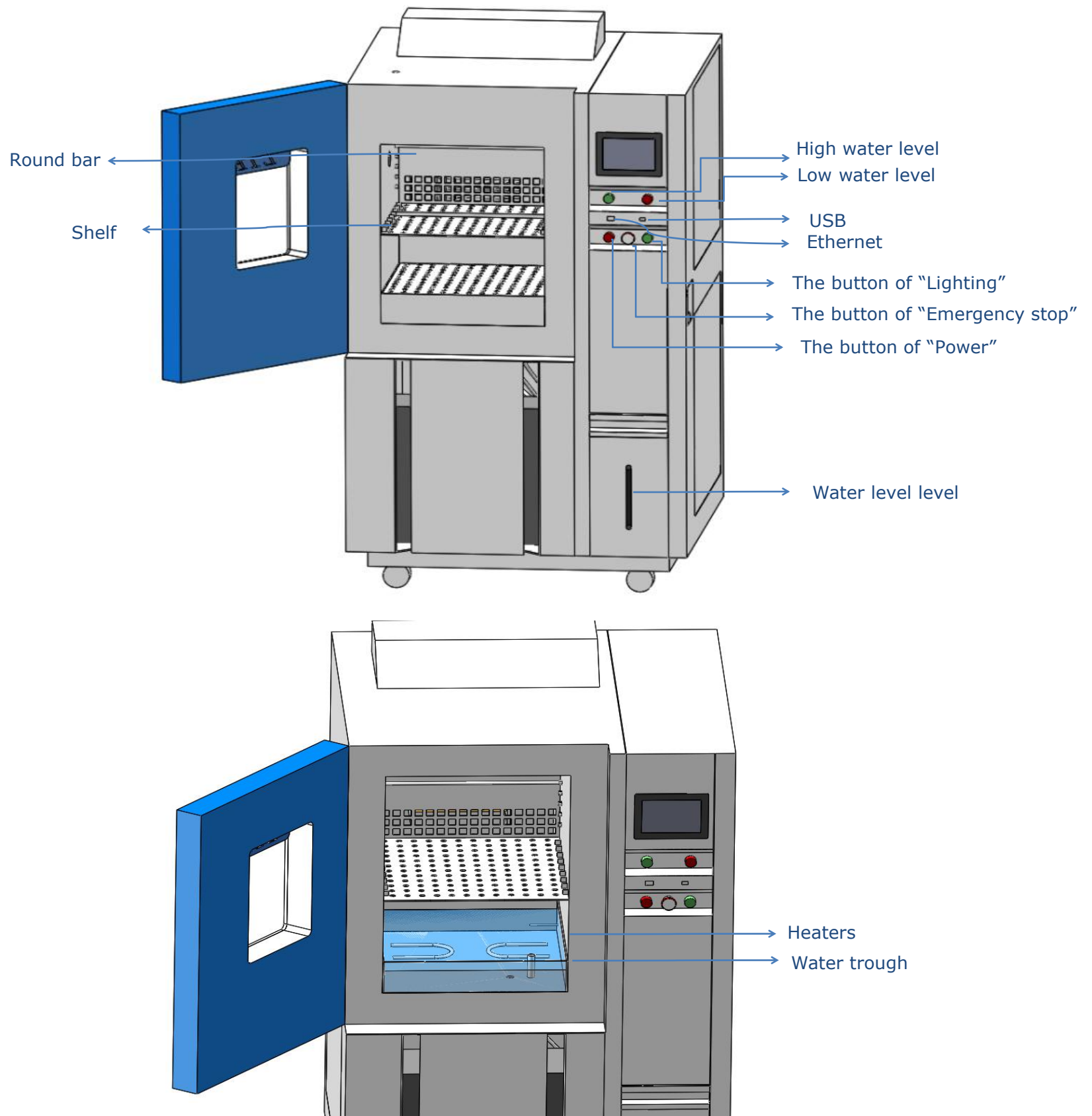


Military



Cable

1. Construction Diagram



2. Test Requirements

Table 1 — Condensation test atmospheres

Test atmosphere		Cycle duration		Conditions in working chamber after reaching equilibrium	
Type	Code	Test period(s)	Total	Air temperature	Relative humidity
Constant-humidity condensation atmosphere	CH	From warm-up to end of exposure	—	$(40 \pm 3) ^\circ\text{C}$	Approx. 100 % with condensation on test specimens
Alternating condensation atmosphere	AHT	8 h including warm-up	24 h	$(40 \pm 3) ^\circ\text{C}$	Approx. 100 % with condensation on test specimens
		16 h including cooling down (climatic chamber open or ventilated)		$18 ^\circ\text{C}$ to $28 ^\circ\text{C}$	Approaching ambient
	AT	8 h including warm-up	24 h	$(40 \pm 3) ^\circ\text{C}$	Approx. 100 % with condensation on test specimens
		16 h including cooling down (climatic chamber closed)		$18 ^\circ\text{C}$ to $28 ^\circ\text{C}$	Approx. 100 % (approximately saturated)

3. Technical Parameter

Model		ATH-100A	
Internal Size (mm)		400*500*500	D*W*H
Overall Size (mm)		900*1050*1620	D*W*H
Interior Volume		100L	
Parameter	Temperature Range	10℃ ~ +60℃	
	Temperature Deviation	± 2.0℃	
	Humidity Range	95%RH ~ 100%	
	Humidity Deviation	± 2.5% RH	
	Cooling Rate	1℃ / min	
	Heating Rate	3℃/ min	
Structure	Testing room roof	Slope shape designed, to avoid condensate drop on samples	
	Sample shelf	1pc sample shelf + 1pc round bar (place the sample with horizontal 60° angle)	
	Water trough	Build-in water trough in testing room	
	Water condensate	Heating the water inside the trough to creat condensation	
	Cooling	Cooling system	Mechanical compression refrigeration system
		Refrigerating unit	French TECUMSEH compressor, R404A Refrigerant
	Heating Element	Nichrome heater	
	Controller	Programmable color LCD touch screen controller	
		Ethernet connection, USB port	
	Humidity	Water supply system	Automatic water supply
		Water supply system	Water purification system
		Dehumidification	Evaporator
	Sensor	Temperature Sensor	PTR Platinum Resistance PT100Ω/MV A-class
		Humidity Sensor	Dry and wet bulb sensor
	Cable hole	Dia50mm port on left side, with plug	
	Build-in Water Tank(mm)	270*300*450	
	View Window Size(mm)	250*300	
	Air Circulation	Centrifugal wind fan	
	Safety Device	Humidifier dry-combustion protection; over-temperature protection; over-current protection; Refrigerant high-pressure protection; Water shortage protection; Earth leakage protection	
Material	Exterior Material	Steel Plate with protective coating	
	Interior Material	SUS304 stainless steel	
	Thermal Insulation	Polyurethane foam and insulation cotton	
	Observation Window	Interior lighting, double-layer thermo stability silicone rubber sealing	
Power Supply		AC220V 50Hz 1Phase	
Maximum Noise		65 dBA	
Environmental Conditional		5℃~+35℃ ≤85% RH	

3. 【Construction】

1.) Workroom

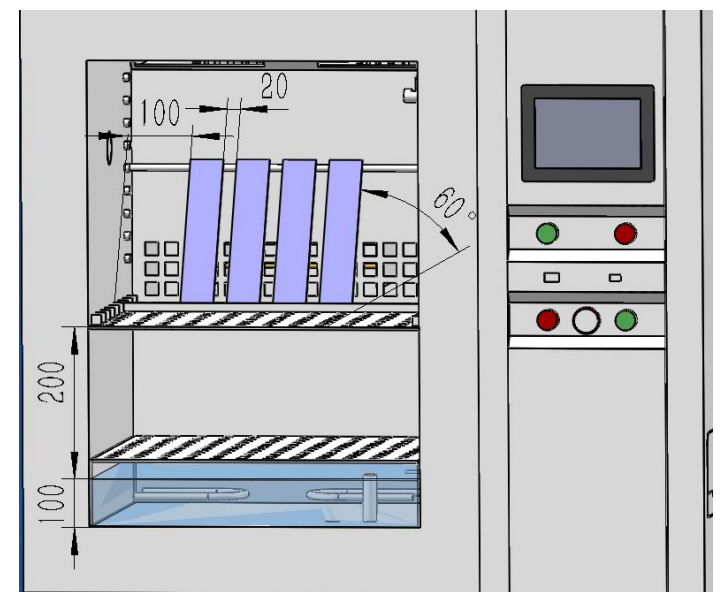
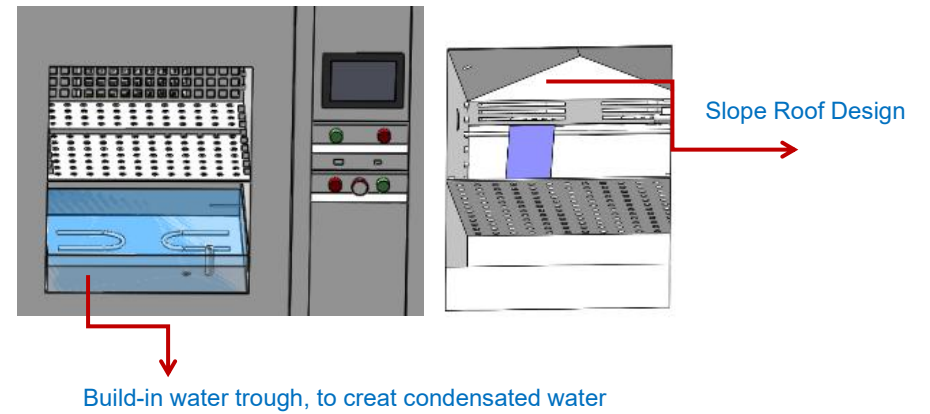
- The internal material is 304 stainless steel, mirror surface, corrosion resistance
- Rust-proof to high and low temperature and moisture corrosion;
- Nice ruggedness and long life.
- Water drain hole at side of workroom
- Top of testing room with pressure relief vent
- Slope shape designed, to avoid condensate drop on samples

2.) Sample Shelf

- SUS304 stainless steel punching sample shelf
- Place samples horizontal 60° angle;
- Each shelf with max 50Kg load, if need more weight, tell us ahead.

2.) Sample Placing

- Distance from wall at least 100mm
- Distance from bottom edge of sample to water surface, at least 100mm
- Spacing between specimens, at least 20mm
- Sample placing horizontal 60° angle
- No condensation water is allowed to drip onto specimens from walls or ceiling of chamber



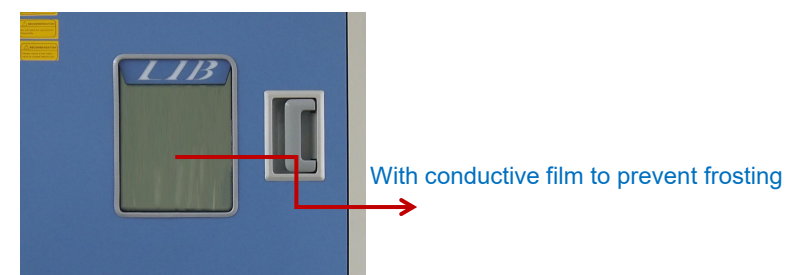
3.) Cable Hole

- With 1pc test hole, one located on left
- Hole with stainless steel flange.
- Prevent moisture into insulation layer
- The standard inner hole diameter is 50mm.
- Soft silicone plug seal; Metal enclosure closed, beautiful designed.



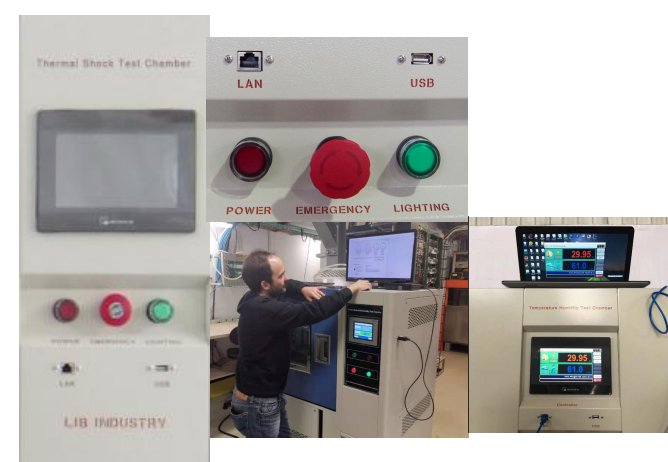
4.) Viewing Window

- Double layer insulating glass 8cm thick.
- Window made of tempered glass.
- The conductive film is located on the interior glass to prevent window frosting.
- Built-in LED light for the work room lighting ;can clearly observe samples.
- The light control button is located below the controller.



5.) Controller

- PID programmable color touch screen controller.
- Ethernet interface, USB port
- LIB also can preset program into the controller based on user testing requirements.
- The set system language is English for standard.
- Controller with buttons of : High water level, Low water level, USB port, Ethernet, Lighting, Emergency, Power.



6.) Water Re-circulation

- Water purifier: mainly purification from water source to water tank.
- The filter element is suggested to be replaced once a year.
- LIB provided filter element shipping with machine
- Water re-circulation system



7.) Automatic Water Inlet

- Automatic control of the water intake of equipment;
- Automatic inlet diameter 1/2 inch;
- High and low water level alarm, water shortage lights and sound.
- Standard 2 meter drain pipe provided



8.) Castor

- Install 4 castors for ease moving, with brakes function.
- Caster height adjustable.



9.) Insulation

- 10cm thick polyurethane foam and insulation cotton;
- Better insulation performance, degradation resistance, environmental protection, noise reduction.

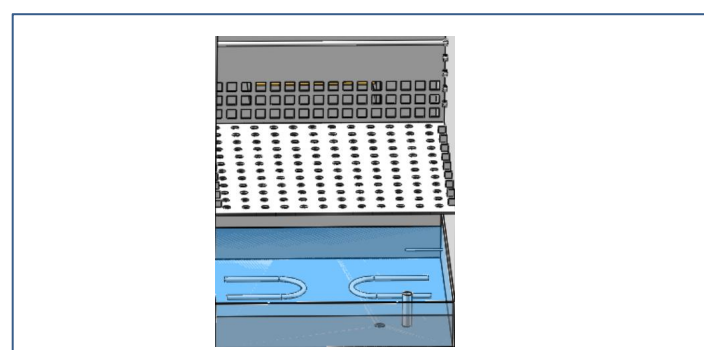
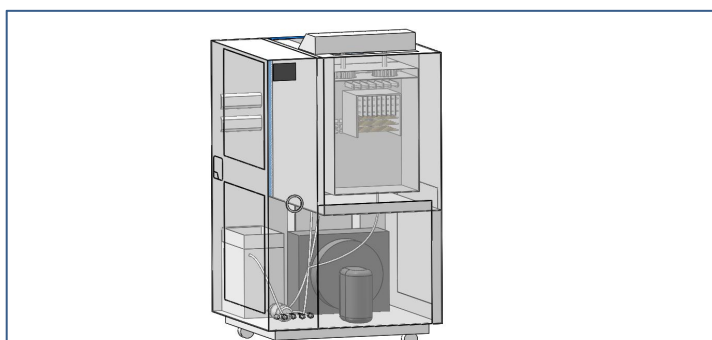


10.) External Materials

- A3 steel plate with galvanized coating;
- Electrostatic treatment;
- High and low temperature corrosion resistance;
- High hardness, anti - impact
- Very high safety factor;
- Color can be customized.



Core Function

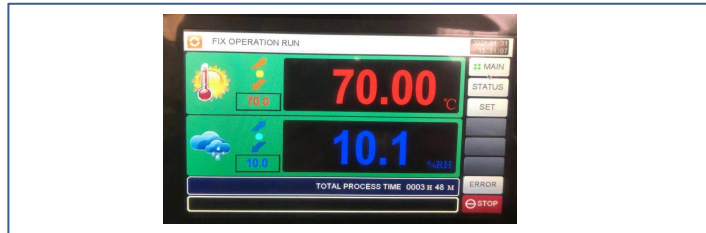
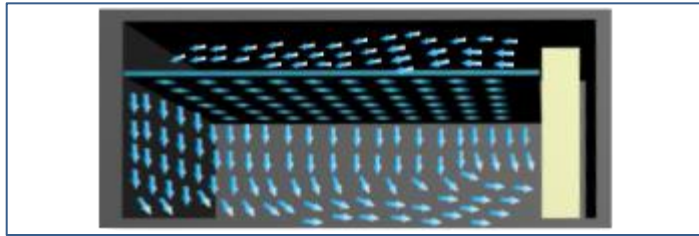


Condensation Constitute

- Condensation can be formed on the surface of the test specimens by cooling the chamber air temperature and testing specimens
- The condensate is composed by condensation water and dissolved matter from test specimens during testing

Humidity System

- Heating the water reservoir to creating humidity for working room
- Avoid generating excessive steam and the water temperature should not exceed 60 °C



Air Circulation

- The centrifugal fan is installed at the rear of the chamber body, and the air is uniformly distributed through the air outlet.
- Air circulation adopts air outlet at top and air return at bottom, and the wind speed and pressure are in compliance with the test standard, and the temperature is stabilized at the moment of switching.
- The high-quality centrifugal fan is used to strongly supply air circulation, making the temperature distribution in the test area uniform.

Controller System

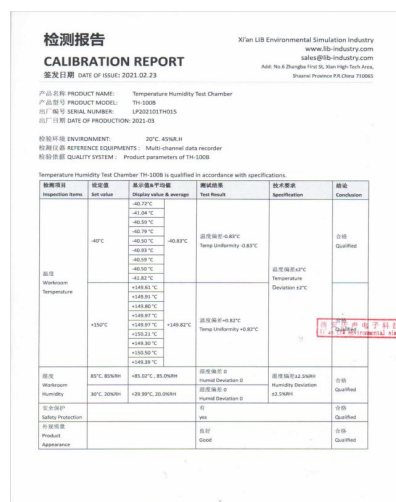
- The PID controller as the main control unit to command, operate, detect and redistribute the various components of the equipment to achieve maximum effective use.
- The temperature control adopts P.I.D. S.S.R. system synchronous coordinated control, which can improve the stability and life of the control components and interface.
- Screen display function: LCD display, which can display test conditions (including temperature section, cycle number, running time and remaining time, etc.).

Temperature and Humidity Sensor

- PT-100 Class A sensor, real-time accurate detection and display of temperature changes at 0.001 degrees.
- A wet gauze and a real-time temperature, converted by temperature difference, showing real-time relative humidity.

4. 【Calibration】

- ◆ Before delivery, LIB engineer will calibrate it, and issue “Calibration Report”;(1&2)
- ◆ Calibration Items: 9 points temperature calibration, use 9pcs PT100 temperature probes



(1)



(2)

5. 【Training】

Method 1

- We provide training to help you better operate machine,our engineer will teach you step by step by video or online.It's also easy to operate.



Method 2

- We invite you to visit our plant, and our engineer will give you the training ,operation ,maintenance for free ,you only pay for your air ticket and other fee.



6. 【Packaging】

- 1) First, Seal chamber with waterproof plastic film. Protect chamber from seawater corrosion.
- 2) Second, Buffer foam is placed in the four corners of the chamber. It is used for fixing equipment to prevent shaking and damaging chamber during transportation
- 3) Plywood: standard wood export packaging.
- 4) The wooden box is fixed by sheet metal to prevent damage during transportation.



✧ Appendix

Documentation attached with the packing:

1. 1 set test chamber ;
2. Warranty Card;
3. Certificate of Qualification;
4. Calibration Report, issued by LIB (manufacturer);
5. Operation Manual;
6. Circuit diagram;

7. 【Shipping】

1.) **Material:** Export standard wooden box

*Can be used for Sea, Air, Railway, Truck and Multimodal transport.

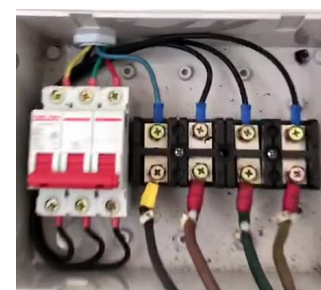


8. 【Installation Condition】

Before delivery, LIB team will finish all installation and commissioning works. When you receive, you can use it directly.

1.) Power Supply:

- 220V, 50Hz, 1phase
- L1 for live wire, N for null wire, PE for grounding wire
- Each wire with mark on it



2.) Water connection

- With automatic water inlet, with water hose, connect with lab water supply
- With water drainage port at back side of chamber

3.) Environment Conditions

- Temperature: +5°C ~ +35°C
- Relative humidity: ≤85%
- Pressure: 86 KPa—106 KPa

4.) Safety Instruction

- Prohibited to test explosive, inflammable and high corrosive substance
- Chemical exposure to the equipment is prohibited
- Equipment must be safety on the ground to avoid electrostatic induction

5.) Space Requirements

- Door: larger than width and height of the equipment, ensure the goods can into the room successfully
- Keep front with 1000mm space
- Keep back with 800mm space
- Keep left, right and top with 600mm space

10. 【Warranty & Service】

3 Years Warranty, Lifelong Follow-up Services

✧ **Professional After-sales Team** : If you have any questions during operation, we will supply solution to you with 24 hours.

■ Warranty Condition

1. *Within three years warranty period,*

- ✓ Since the date of dispatching by the customer, LIB will repair the product. if the product, the material of the parts, the design and manufacturing of the products raised hardware problems caused by product itself rather than human error.

2. *After the warranty period,*

- ✓ LIB repairs the products, and will collect the basic costs of the spare parts , but service is free always.

■ How to Service

1. At first, our test chambers are produced based on 20 years product lifetime. Normally once test chambers have problems, we judge the problems, and send spare parts to our customers, and teach them how to change new parts on by email or video, all spare parts and shipping cost (by DHL, TNT, and FedEx) paid by LIB.

2. If the customer needs our engineer on-site service, they only need pay the ticket accommodation to our Engineers, service is for free.

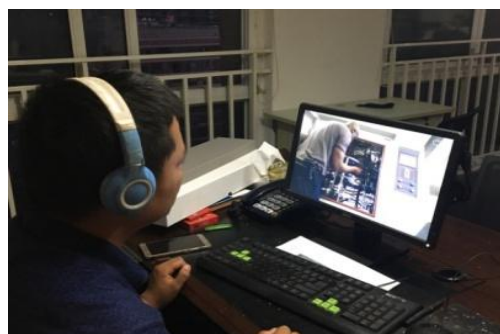
3. If products still can't use after our engineers repair, we will produce a new test chamber (same as the old one) to our customers with no charge.

■ Service Methods



Response within 12 hours

+



Online Service

+



Teach through Video

+



**Engineers On-site installation,
Commissioning, training**

+



On-site repair and Maintenance



Produce a new chamber

PROVIDING TEST SOLUTION, PROVIDING TEST EQUIPMENT

Xi'an LIB Environmental Simulation Industry is a lead provider of environmental test chamber in China, with its own brand (LIB) design, production, sales and service since 2009. We continually update technology and develop new products for customer's needs.

Our main products included temperature and climate test chambers, corrosion chambers, weathering testers, IP dust and rain chambers, ozone test chamber, noxious gas SO₂ H₂S chamber, walk-in chambers. We provide test chamber, we provide test solution. Standard and customized products to meet different customer needs.

By 2018, global market has spread to 53 countries to USA, Canada, Mexico, Brazil, Peru, Russia, German, UK, France, Finland, Netherlands, Poland, Switzerland, Thailand, Philippines, Singapore, Malaysia, Australian, South Africa etc. and the market continues to expand.

At present 7 Tier-one agents around the world provide LIB products, installation and maintenance service for customers. Make things simple and convenient.

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PARTNER

LIB Industry®

LIB became a registered trademark of our company since 2017 year.



CE ROHS

